

a mixed resin of an ethylene · α-olefin copolymer having a density of 0.910 to 0.930 g/cm³, an ethylene · α-olefin elastomer having a density of 0.860 to 0.900 g/cm³ and a high-density polyethylene having a density of 0.955 to 0.970 g/cm³; or

a mixed resin of a polypropylene having a density of 0.900 to 0.930 g/cm³, an ethylene · α-olefin elastomer having a density of 0.860 to 0.900 g/cm³ and a high-density polyethylene having a density of 0.955 to 0.970 g/cm³;

a third layer is made of an ethylene · α-olefin copolymer having a density of 0.930 to 0.950 g/cm³; or

a mixed resin of a polypropylene having a density of 0.900 to 0.930 g/cm³ and an ethylene · α-olefin elastomer having a density of 0.860 to 0.900 g/cm³;

a fourth layer is made of a mixed resin of a polypropylene having a density of 0.900 to 0.930 g/cm³, an ethylene · α-olefin elastomer having a density of 0.860 to 0.900 g/cm³ and a high-density polyethylene having a density of 0.955 to 0.970 g/cm³; and

a fifth layer is made of an ethylene · α-olefin copolymer having a density of 0.930 to 0.950 g/cm³.

The multilayered film is suitable for forming flexible containers for use in the medical field such as a bag for holding infusion fluids. Multilayered bags made from polyethylene resin are generally known in the medical field, but they are deficient in one or more respects as set forth on page 3 of the specification. The present invention, avoids these deficiencies by providing a multilayered film that is superior in heat resistance, blocking resistance, strength, sealability, transparency, and flexibility.

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In the Office Action, the Examiner rejected claims 1-8 under 35 U.S.C. § 103(a) for being obvious over EP 0 699521 to Watanabe et al. (hereafter EP'521) in view of U.S. Patent No. 5,478,617 to Watanabe et al. (hereafter US'617). Both of these references are patents belonging to the assignee of the present application, so applicants are well familiar with the teachings of this reference. In fact, the primary reference (EP'521) was cited by applicants and in the International Search Report (ISR) of the corresponding International Application No. PCT/JP99/06932. For the Examiner's consideration, the international preliminary examining authority stated in the International Preliminary Examination Report (IPER) issued in PCT/JP99/06932 that:

The inventions described in claims 1 through 8 are not described in any of the documents cited in the ISR [(EP 0 699521) was the only document cited] or any of the documents considered relevant to the inventions, nor are they obvious to a party skilled in the art.

As outlined by the Examiner, EP'617 also discloses a multilayered film having five layers containing one or more ethylene · α-olefin copolymers in the layers that have densities similar to those of the layers of the film of the present invention. More particularly, the reference appears to disclose the first and fifth layers of the present invention, the second layer when it is made of the mixed resin of two ethylene · α-olefin copolymers and a high density polyethylene, and the third layer when it is made of the ethylene · α-olefin copolymer. However, it does not show the fourth layer made of a mixed resin of

35 to 55% by weight of a polypropylene having a density of 0.900 to 0.930 g/cm³, 40 to 60% by weight of an ethylene · α-olefin elastomer having a density of 0.860 to 0.900 g/cm³ and 2 to 8% by weight of a high-density polyethylene having a density of 0.955 to 0.970 g/cm³. [i.e., mixed resin (C) in claim 1]

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Rather, the fourth layer of EP'521 is the same as the second layer, namely a mixed resin of two ethylene · α-olefin copolymers and a high-density polyethylene of similar densities. In essence then, the difference is that in the fourth layer of the film of the present invention from 35 to 55% by weight of a polypropylene having a density of 0.900 to 0.930 g/cm³ has replaced the 40 to 60% by weight of an ethylene · α-olefin copolymer having a density of 0.900 to 0.920 g/cm³. See the description of the resin mixture of the second layer beginning on page 3, line 58, the fourth layer being the same as the second layer.

US'617 teaches a mixed resin containing polypropylene in a multilayered film used for making a container in the medical field.

The Examiner therefore believes it would have been obvious to replace the first ethylene · α-olefin film in the mixed resin of the fourth layer of EP'521 with the polypropylene of US'617.

As noted in column 1, lines 53-59 of US'617, the object of the invention of this reference is to provide a multi-layer film that can endure high-temperature sterilization "wherein an easy peelable part causes no weld by a sterilization treatment when it is used for a container having a plurality of chambers" and further in column 4, lines 55-61 that the polypropylene component is used in the inner layer of the multi-layered film for this purpose. See also column 6, lines 7-12 where it states that:

when the container of the present invention is molded into a container having a plurality of chambers, the easy peelable seal part between the respective chambers can be formed by directly heat-sealing under a mild condition in comparison with the heat-sealing condition of the peripheral edge part.

On the other hand, in the present invention, the mixed resin containing polypropylene used in the fourth layer and optionally also in the second and third layers

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is used to provide flexibility, heat resistance, formability and pinhole resistance to the multilayered film (see page 11, line 25 to page 12, line 4 of the specification). See also the purpose for mixed resin (D), which also contains polypropylene, page 13, lines 2-5. Thus the purpose and effect of the polypropylene in the layers of the multilayered film of the present invention are entirely different from the purpose and effect of the polypropylene in the inner layer of the multilayered film of US'617.

In addition, see also the results of Examples 1 to 8 as well as Comp. Examples 1 to 3 in Table 2 of US'617 in which various mixed resins containing propylene are used as the inner layer of multilayered films. From the results, it is apparent that use of a mixed resin containing propylene is not always useful in the production of a multilayered film.

From the above, it is clear that US'617 does not suggest using a mixed resin containing polypropylene for the reason it is used in the present invention. Thus, it cannot be said that one of ordinary skill in the art would expect the results of the present invention from the teachings of EP'521 and US'617, and consequently, the combination of these references as proposed by the Examiner comes only from applicants' specification and not from anything taught by these references.

As noted by the Federal Circuit and as expressed, for example, in Interconnect Planning Corp. v. Feil, 774 F.2d 1132, 227 U.S.P.Q. 543 (Fed. Cir. 1985) at page 551:

When prior art references require selective combination by the court to render obvious a subsequent invention, there must be some reason for the combination other than the hindsight gleaned from the invention itself.

Further, in Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 5 U.S.P.Q. 2d 1434 (Fed. Cir. 1988), the court noted:

Something in the prior art as a whole must suggest the desirability, and thus the obviousness, of making the combination. [837 F.2d at 1051, 5 U.S.P.Q. 2d at 1438, citing Lindemann, 730 F.2d 1452, 1462, 221 U.S.P.Q. 481, 488 (Fed. Cir. 1984).]

or the more recent case of In re Kotzab, 217 F.3d 1365, 1369-70, 55 U.S.P.Q. 2d at 1313, 1316 (Fed. Cir. 2000):

A critical step in analyzing the patentability of claims pursuant to section 103(a) is casting the mind back to the time of the invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then-accepted wisdom in the field. Close adherence to this methodology is especially important in cases where the very ease with which the invention can be understood may prompt one to fall victim to the insidious effect of a hindsight syndrome wherein that which only the invention taught is used against its teacher.

Most if not all inventions arise from a combination of old elements. Thus, every element of a claimed invention may often be found in the prior art. However, identification in the prior art of each individual part claimed is insufficient to defeat patentability of the whole claimed invention. Rather, to establish obviousness based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the applicant. [citations omitted]

Where is the "desirability" suggested in the US'617 reference of making the substitution suggested by the Examiner? If the substitution of the polypropylene containing layer of US'617 had the same effect that it was used for in US'617, the substitution might well be considered obvious, but when the substitution results in an unexpected and different result, it cannot be considered obvious. As noted by the court in in re Dow Chemical Co., 837 F.2d 469, 5 U.S.P.Q. 2d 1529 (Fed. Cir. 1988) "both the suggestion of the invention and the expectation of its success must be found in the prior art "(emphasis added). See also M.P.E.P. §716.02(a).

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Withdrawal of the rejection of claim 1 for being obvious over the cited combination of EP'521 and US'617 is therefore requested.

Regarding claim 2, where the second layer is also made of a mixed resin containing polypropylene [i.e., mixed resin (C)], it is believed this claim is also patentable over the cited combination of references for the same reasons expressed above.

It is believed claims 1-8 are in condition for allowance and such action is therefore requested.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,
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By:


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APPENDIX TO AMENDMENT OF December 31, 2002

Amendments to the Claims

1. (Amended) A multilayered film comprising five layers, [characterized in that] wherein:
 - a first layer and a fifth layer are made of (A) an ethylene · α-olefin copolymer having a density of 0.930 to 0.950 g/cm³;
 - a second layer is made of:
 - (B) a mixed resin comprising 30 to 60% by weight of an ethylene · α-olefin copolymer having a density of 0.910 to 0.930 g/cm³, 35 to 65% by weight of an ethylene · α-olefin elastomer having a density of 0.860 to 0.900 g/cm³ and 1 to 10% by weight of a high-density polyethylene having a density of 0.955 to 0.970 g/cm³; or
 - (C) a mixed resin comprising 35 to 55% by weight of a polypropylene having a density of 0.900 to 0.930 g/cm³, 40 to 60% by weight of an ethylene · α-olefin elastomer having a density of 0.860 to 0.900 g/cm³ and 2 to 8% by weight of a high-density polyethylene having a density of 0.955 to 0.970 g/cm³;
 - a third layer is made of:
 - the ethylene · α-olefin copolymer (A); or
 - (D) a mixed resin comprising 40 to 60% by weight of a polypropylene having a density of 0.900 to 0.930 g/cm³ and 40 to 60% by weight of an ethylene · α-olefin elastomer having a density of 0.860 to 0.900 g/cm³; and
 - a fourth layer is made of the mixed resin (C).

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7. (Twice Amended) A container comprising the multilayered film according to claim 1, which container has the first layer of the multilayered film as an outer layer and the fifth layer [has] as an inner layer.

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